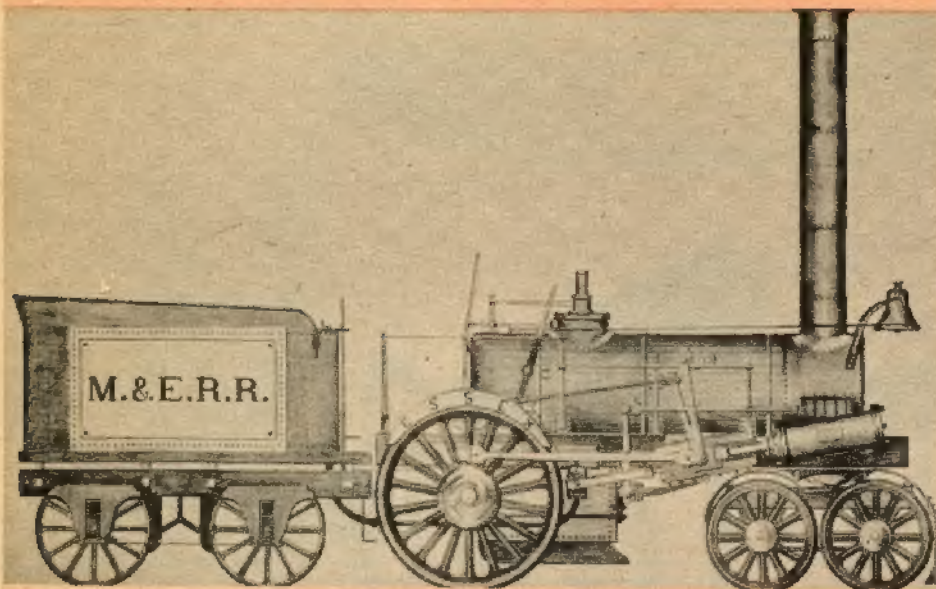
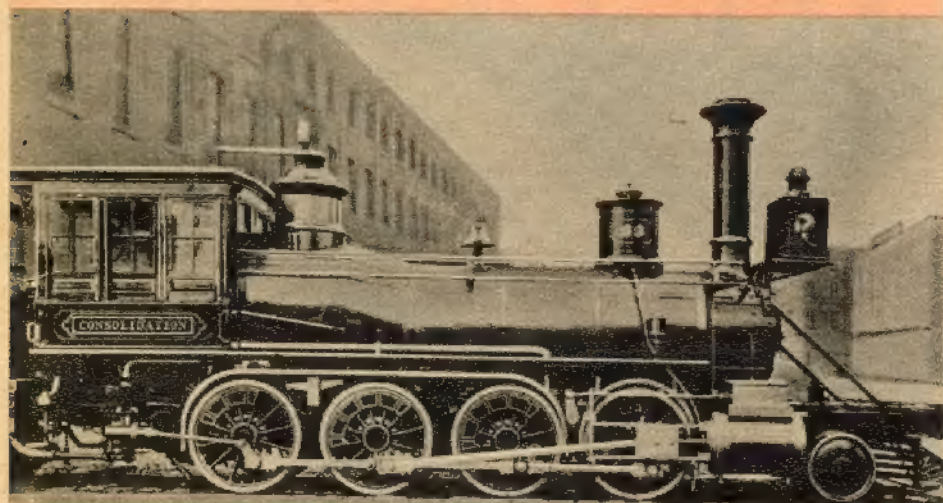


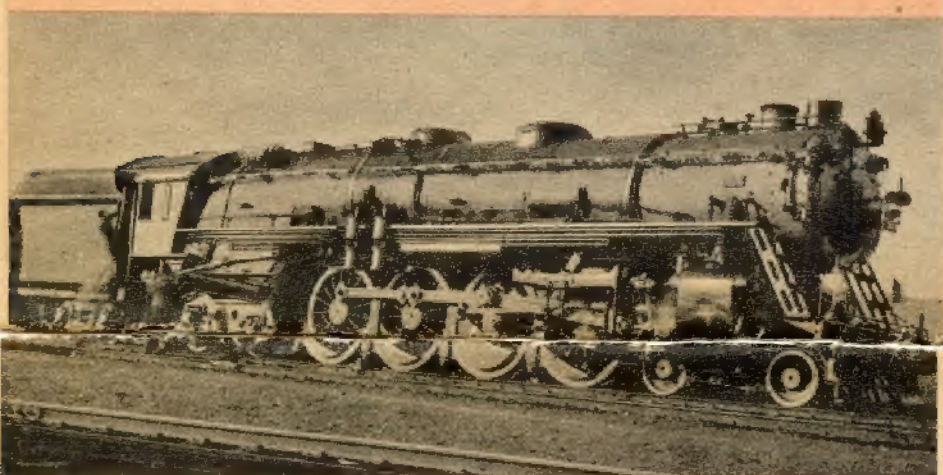
RAILROADING in NEW JERSEY



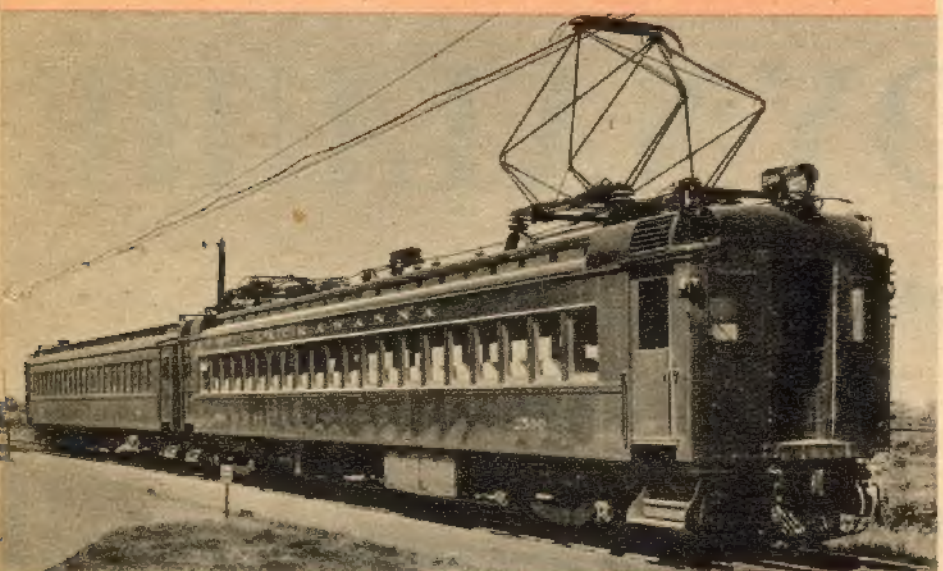
The M. & E. "Essex" built by Seth Boyden in 1838.



Lehigh Valley's "Consolidation," popular "freighter."



The "Pocono," used in freight and passenger service.



Multiple units ended need of turning engines around.



Streamlined Diesels are clean, fast and efficient.



Erie wood burner of 1867 in Paterson. Note flaring stack and logs on tender.

(Picture Credits: Warren B. Crater, Thomas T. Taber, Railroad Magazine, New Jersey Historical Society, Walter A. Lucas)

'Glamor Gals' of the Rails

Majestic 'Iron Horses' Share Romantic Appeal with Sleek Diesels and Electrics

BY JOHN T. CUNNINGHAM

(New Jersey probably had a more important role in the establishment and development of railroads than any other state in the country. This article, the fifteenth of a series, deals with the development of motive power, one of railroading's major problems.)

IKE Dripps wasn't any different from any other young mechanic from the beginning of time. As soon as he found something mechanical to fool around with, the first thing he did was to praise how well it functioned. Then he took it apart and improved it.

Dripps was luckier than most young mechanics, at that. He got hold of New Jersey's first locomotive, the "John Bull," before any one else had a chance with the English import. In fact, he got hold of the "Bull" in 1831 while it was still a jumble of parts on a Bordentown pier. All that was missing were the blue prints.

Young Ike tinkered and tinkered and soon had a locomotive just like its English builders had intended it to be. Then he set out to change it.

By the time the locomotive was ready for its maiden run at Bordentown in November, 1831, Dripps had added a tender to carry water and a low two-wheeled truck attached to the front to bump wandering cows off the rails. Above all, Ike dreamed of the coming day of high speeds.

Yes, high speeds.

After all, Dripps was only 21 years old and he certainly didn't expect to poke along at 15 miles an hour for the rest of his life. He could see the day when locomotives would go 40, maybe 50, miles an hour.

THAT'S the way locomotive builders have been ever since. That's the way American railroad prime movers have changed from simple nine-ton woodburners to the Diesel giants of today. Along the

way there were lots of men like Isaac Dripps.

Even before the "John Bull" settled down to its run on the Camden & Amboy Railroad between Bordentown and South Amboy, Dripps and his boss, Robert Stevens, sat up nights planning something better.

The result was the "Monster," a low slung job with four driving wheels on each side which raced over the C. & A. rails in 1834. Probably the heaviest engine of its time, the 30-ton "Monster's" drive wheels were 48 inches in diameter.

Stevens and Dripps were even then deep into the intricacies of locomotive development as they wrestled with such things as increased weights and increased drive wheels for greater traction.

Generally, they were a step ahead of the trends of a 30-year period from 1840 to 1870, three decades in which locomotive builders kept experimenting with new wheel arrangements in order to get greater weight on the drivers for adhesion to the steel rails.

ONE notable experiment was the unique locomotive which Robert Stevens planned in 1847 after he had seen a Crampton engine in use on English railroads.

The first of the New Jersey Cramptons, powered by one pair of huge eight-foot driving wheels, was tried in 1849. In theory the eight-foot drivers, eating up 25 feet every time the wheels revolved, should have given greatest speed with the least expenditure of power. Actually, however, the locomotive was limited in hauling capacity and even with light loads had trouble getting under way.

It was all very well for Stevens and Dripps to be ex-

perimenting with large drive wheels and speedy engines down on the flat plains. Things were different up in the mountains between Newark and Dover, where the Morris & Essex built westward.

From the first, steep grades and sharp curves had been the rule rather than the exception on the M. & E. No other New Jersey railroad dared the slopes head-on in that fashion. Ever since, the M. & E.—and its successor, the Lackawanna—necessarily has had to demand power from its locomotives.

ANTHRACITE eventually brought about the same situation to the state's other coal carriers—the Jersey Central, the Erie, the Lehigh Valley and the New York, Susquehanna & Western. Those big payloads of black diamonds meant money in the railroad till—but they also meant that original little engines were utterly useless.

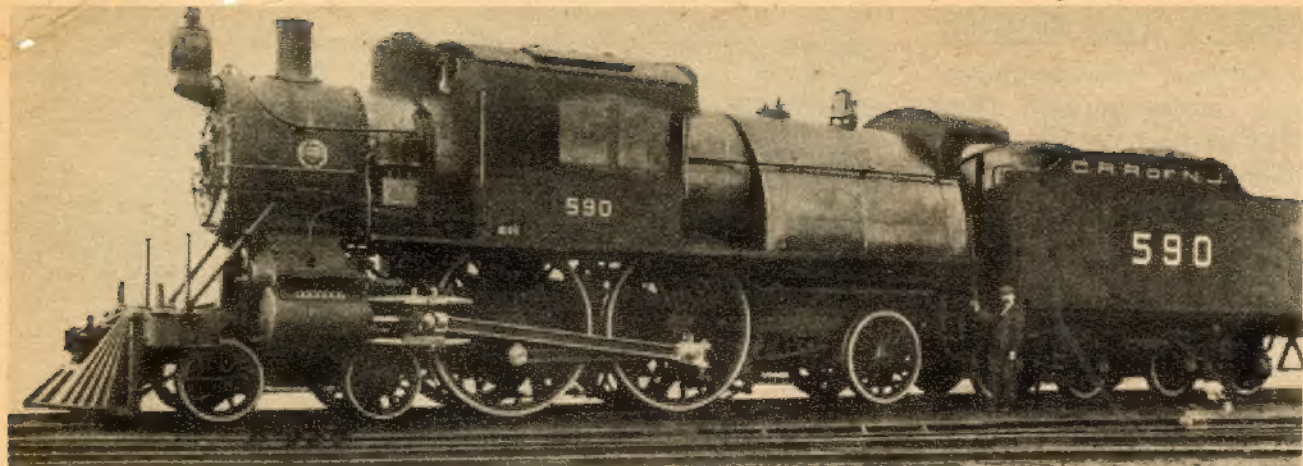
Down in Baltimore a former New Jersey horse breeder thought he had the answer.

He was Ross Winans, who had risen to prominence and wealth with the Baltimore & Ohio Railroad. The same Ross Winans of Vernon Valley who in 1825 picked up a book on mechanics while visiting New York. Thereafter they couldn't keep him down on the farm.

In fact, the good farmers up in the valley were disgusted with the way he neglected his horse breeding business to build little carts in the garret of his father's Sussex County farmhouse. "Railroad cars," he called them.

Then, one day in 1828, Ross went to Baltimore to sell some horses. While there he checked on all the talk he

APRIL 15, 1951



A Jersey Central "Mother Hubbard." Below: Drawing of Ross Winans' "Camel."

had heard about the new B. & O. Railroad. Winans was through with horses.

THE B. & O. welcomed Winans in 1830, enthusiastically indorsed the free-moving cars which he developed in the Vernon garret. He went to England and returned as a first-rate railroad equipment authority.

Early in 1848 word seeped through the railroad world that Winans had developed a powerful new eight-wheeler.

"He calls it a 'Camel,'" railroad men told one another. "Funniest looking thing you ever saw. Cab perched up on the boiler. Powerful, though they say."

It was powerful, even if the engineers failed to work up any enthusiasm for the cab atop the boiler, particularly when a broiling Summer sun sent temperatures soaring.

EVEN more to be pitied was the fireman, who stood on a little footplate on the rear. Not only was he fully exposed to the elements; he also had the highly hazardous job of scrambling along a narrow running board to pour melted tallow through a valve to lubricate the engine. (Incidentally, this led to the still used fireman's nickname of "fallowpot").

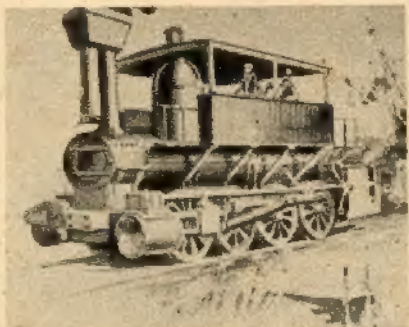
Quickly a bitter controversy ensued.

Elsewhere, (including on Winan's own B. & O.), locomotive planners had been developing "10-wheelers" as the answer to hauling heavy loads over rough terrain. Their builders insisted they had it all over the slow and cumbersome (but powerful!) "Camel."

Winans fought back, in press and pamphlet. He even asked the B. & O. directorate, with remarkable candor, what would become of his prosperous locomotive plant if 10-wheelers supplanted the "Camel?" Naturally, Winans pointed out, he wouldn't think of building anything else.

THE "Camel" achieved no popularity in Jersey, mainly because a locomotive built in Paterson journeyed out to the Lackawanna coal fields one day in 1854 and easily defeated the "Camel" in a competition to determine the burning capabilities of anthracite. The superiority of the Paterson built "Anthracite" helped hasten the end of the "Camel."

Of course all of the coal hauling lines wanted to replace their wood-burning en-



gines with coal burners if they could, a desire prompted as much by a growing shortage of fence posts along the rights-of-way as it was by progressiveness.

The first anthracite engines were fired with huge chunks of coal and took the obvious name of "lump burners." The chunks were carefully screened from the small pieces—the "culm"—which were thrown away.

Why not, some one asked, sell the lumps and burn the "culm?" A good question. James Wooten, general manager of the Philadelphia & Reading, set out to find the answer just after the Civil War.

The problem was mainly in getting enough air to burn the anthracite, since fireboxes of the day didn't have enough grate area. Wooten devised a bigger firebox, built it right out to the clearance limits on either side. The "culm" burned perfectly.

There was a slight catch. The firebox was so wide that the engineer couldn't see around it.

Wooten's remedy produced one of the most popular locomotive types of all times—the "Mother Hubbard," with its cab up forward of the firebox and astride the boiler. Not on top of the boiler as in the "Camel"—as railroaders ever since have pointed out to keep non-initiates from calling a "Mother Hubbard" a "Camel."

NEARLY all of New Jersey's coal carriers welcomed the "Mother Hubbards" and used them consistently through the years, until it became cheaper to import and burn soft coal in the fireboxes.

Finally the Old Lady was ruled out of contention in 1918, on the grounds that having the engineer up ahead in the cab and the fireman back with the firebox was not safe. However, railroads were permitted to keep in operation those they had. The Lackawanna, once one of the greatest devotees of the "Hubbard," now has none. The Jersey Central, on the other hand, still uses many of them in road service—and is,

in fact, about the last stronghold of the "Mother Hubbard" in the country.

One of the greatest locomotives developed by a railroad traversing New Jersey was the Lehigh Valley's "Consolidation," the big heavy drag freight engine which had one of the longest periods of popularity of any American locomotive.

No doubt about the "Consolidation." It was husky, and more than good enough as long as freight was something to be moved at slow speeds. The practice at the Turn of the Century, as one Jersey Central man put it, was to "hook on everything from the Statue of Liberty to the Jersey City passenger terminal and let the freight drag to Mauch Chunk at 10 miles per hour."

Eventually the railroads became more and more clogged with traffic. Some way had to be found to get the heavy freights rolling faster.

ONE answer was the "Mikado," first built for American railroads in 1902—after it had proved successful



Diesel trailblazer.

on Japanese railroads. The "Mike" was a "Consolidated" with a wider and deeper firebox (and two trailing wheels to support the added weight). The Lackawanna and Lehigh Valley used them extensively.

Obviously, with the slow freights wheeling over the rights-of-way more expeditiously, customers began demanding faster passenger service. That brought in the "Atlantics" and the "Pacifics," locomotives introduced to New Jersey in the late 1890's and the early 1900's, the era when every railroad had speed as its god.

The "Atlantic" was a New Jersey development, taking its name from the Atlantic Coast Line (not the present line to Florida, but rather an old railroad which ran between Camden and Atlantic City), where the flat terrain and the few towns made speed not only practical but highly to be desired.

Geography and topography (Continued on Following Page)

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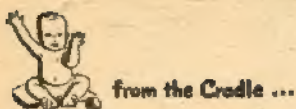
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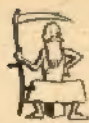


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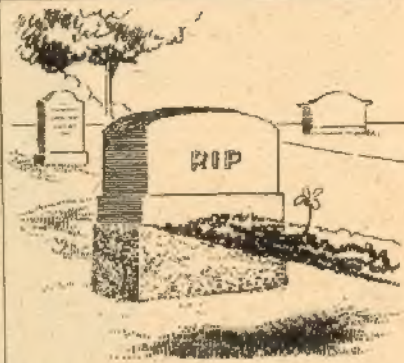
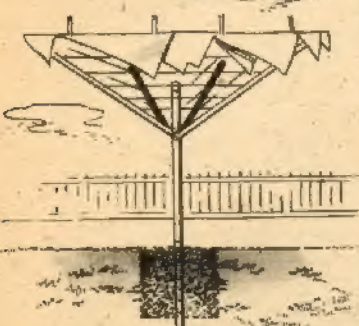
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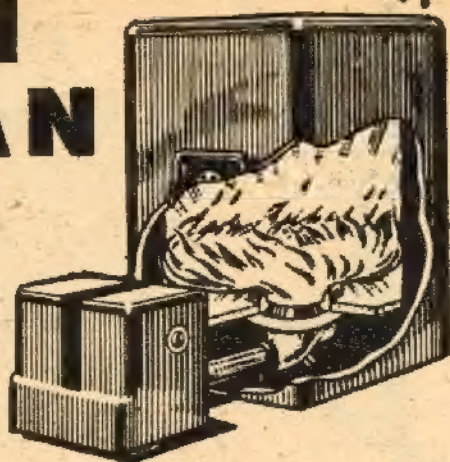
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JERSEY RAILROADS

(Cont'd from Preceding Page)
hadn't changed any from earliest railroading days. The speedways still were the flat plains of Central and South Jersey. Everything rolled well and easily there on the tracks of the Pennsylvania or on the tracks of its rival, the Philadelphia & Reading.

One of the oddest developments in that era was the Reading's "Bicycle" engine, used in fast passenger service between Jersey City and Philadelphia. It was the last effort to use a single driver—a latter day Crampton—and the the results were splendid from a speed standpoint, as long as only two or three cars were attached. In fact, the "Bike" often ran so fast it was difficult to stop.

THE Lackawanna and Lehigh Valley sought and found something new—the engine usually called the "Northern," but known on the Lackawanna as the "Pocono" and the Lehigh Valley as the "Wyoming." The big sleek locomotives proved highly satisfactory in both freight and passenger service.

As the railroads searched, they came abaft of the dark—literally dark—days of World War I when anthracite went to war. It was used on



Morristown railbus.

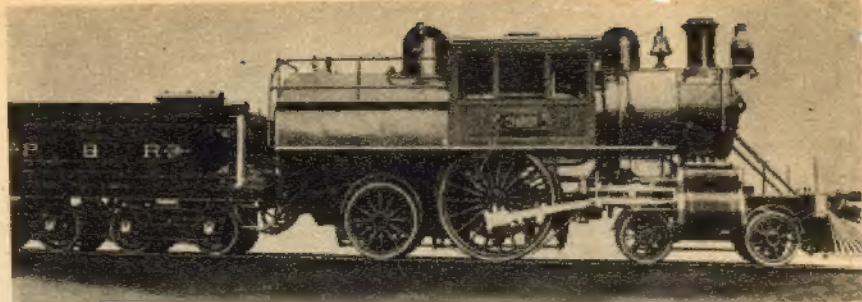
transatlantic ships which had to burn hard coal so that tell-tale black smoke could not be seen by German submarines.

There was no need to worry in the cities and the suburbs about submarines. All they had to worry about was soft coal smoke, which didn't make friends for the railroads. It simply hastened the coming of new motive powers.

One answer to the soft coal made its first tiny mark in New Jersey in 1925, when the Jersey Central put a little 300-horsepower Diesel-electric to work in its yards. That little "1000" Diesel was a forerunner of all such motive power in the country, although the big three-unit Diesels didn't come in quantity until the late 30's.

OTHER railroads, particularly the little lines, also started to experiment with such things as gasoline buggies on the rails. For example, such were the little jitneys the Morristown & Erie ran between Morristown and Essex Fells and the Rahway Valley rolled between Kenilworth and Baltusrol Station.

Elsewhere, on the big lines, railroads were turning for a



Reading's speedy "bicycle" engine and (below) one of the first of Jersey-made "Cramptons."



closer look at the use of electrical power to move their payloads.

Even while all of the experimenting and searching for increased speed, power and efficiency in steam engines was going on, the flash of electricity was seen on state lines. It traced all the way back to the experimental little electric railroad which Thomas A. Edison successfully operated at Menlo Park in 1880.

It took an out-of-state railroad—the B. & O.—to realize first the potentialities of what Edison had tried. It installed the country's first electric run in Maryland and for its efforts was showered with criticism, not the least of which was the somewhat illogical conclusion that electric trains were "socialistic."

THE Pennsylvania made one big leap into the electrified field when it remodeled its line from Pennsylvania Station, New York, to Manhattan Transfer, Newark, as early as 1910. The rest of the trip from Manhattan Transfer south was made with steam power.

Everywhere the talk was of using electrical power. The Lackawanna visioned using the new driving force when it built its new station at Montclair in 1913, by making provisions for possible electric operation. Every railroad considered the possibilities, but not until the late 1920's was anything done on a major scale.

It was the Lackawanna which moved electrical operation a step ahead then, installing its overhead system as far as Montclair in 1930. School children marched to stations along the way to welcome the new trains gliding into platforms with strange silence. Thomas Edison, logically enough, drove the first electric train into Montclair on September 3, 1930. Before the year was out service reached Morristown and in 1931 the Lackawanna's over-

head wires served both Dover and Gladstone.

Finally the Pennsylvania started its vast \$200,000,000 program of electrification in the early 1930's, at the depth of the Depression. Oddly enough, the bad times aided the work, because there were fewer trains running—thus lessening interference—and because labor and materials cost little.

THROUGH electric service from New York to Trenton was accomplished in 1933 and by 1935 the service extended to Washington. Results were immediate and obvious. The running time of the "Congressional Limited" to Washington was cut by 40 minutes. Freight traveled from Harrisburg to Waverly Yards in Newark in two hours less than previously.

Diesels and electrics remove some of railroading's major motive power problems. They are always ready, they are clean, fast and efficient. The Lackawanna multiple unit electric cars end the need of turning locomotives around in terminals. All in all, the new power is wonderfully efficient.

The Erie and the Jersey Central (of the major commuter railroads) still use steam to supplement Diesels in their suburban service, the Erie using "Pacifics" and the Jersey Central "Pacifics" and "10-Wheelers"—some of the latter dating back to the early 1900's. True enough they pour out black smoke and they soot the countryside—yet they remain a symbol of a glamorous past.

After all, who, with an ounce of romance in his soul, would trade a smoking, fiery steam engine roaring majestically over the rails in the twilight for an efficient Diesel? Unless, of course, he was paying the operating bills.

Next Week: The
Jersey Commuter
APRIL 15, 1951